**ReviewArticle**

**FARMACIA CLÍNICA, ATENCIÓN FARMACÉUTICA**

**CONCEPTOS, FILOSOFÍA, PRÁCTICA PROFESIONAL Y SU APLICACIÓN EN EL CONTEXTO COLOMBIANO**

**CLINICAL PHARMACY, PHARMACEUTICAL CARE**

**CONCEPTS, PHILOSOPHY, PROFESSIONAL PRACTICE AND THE COLOMBIAN CONTEXT APPLICATION**

Andrea SALAZAR-OSPINA[[1]](#footnote-2), Viviana CARRASCAL1*,* Dora BENJUMEA[[2]](#footnote-3), Pedro AMARILES1\*

**Abstract**

Pharmaceutical care is a healthcare practicethathas been implemented recently worldwide. Its aim is the rational medication use and the achievement of desired therapeutic goals that improve the patient’s quality of life. This review seeks to define and relate the terms: pharmaceutical care, clinical pharmacy and pharmacotherapy follow-up, which are misunderstood in our field. As well, it seeks to show the transformation of this practice from the traditional pharmacist (limited to the production and distribution of medicines) to our day’scomprehensive pharmacist (active participantof interdisciplinary health teams and responsible for all the medication needs at a political, social and economic level. An approximation of these terms in the National Health System context is also the goal of this review. The aim isto homologate the terminology of this practice in our country and state the future reflections and challenges that the pharmacist and different entities will have to adopt,so this professional practice can achieve the desired therapeutic goals settled by the health teamand in this way improve the patient’s quality of life.

**Resumen**

La Atención Farmacéutica es una práctica asistencial que se ha implementado recientemente en todo el mundo. Su objetivo es el uso racional de medicamentos y el logro de los objetivos terapéuticos con el fin de mejorar la calidad de vida del paciente. Esta revisión tiene por objeto definir y relacionar los términos: Atención Farmacéutica, Farmacia Clínica y Seguimiento Farmacoterapéutico, que aún no son claros en nuestro campo. Además, se pretende evidenciar la transformación de esta práctica desde el farmacéutico tradicional (boticario)que se limitaba a la elaboración y distribución delos medicamentos,hasta el farmacéutico integral de nuestros días (participante activo del equipo interdisciplinariode salud y responsable de las necesidades relacionados con los medicamentos, a nivel económico, político y social. Además, se hace una aproximación de estos términos en el contexto del Sistema Nacional de Salud de Colombia, como respuesta a la necesidad de homologar la terminología de esta práctica en nuestro país y plantear reflexiones y retos que, a futuro,el farmacéutico y las diferentes entidades ejecutoras deben adoptar, para que el ejercicio profesional obtenga los objetivos terapéuticos definidos por el equipo de salud y mejore la calidad de vida del paciente

**Key Words**: Pharmaceutical care, Drug therapy, pharmacotherapy follow-up, Pharmacist, Medication.

**Content**

1. Introduction.
2. Evolution stages in the pharmacist profession.
3. Pharmacotherapyfailure.
4. Pharmaceutical Care and Clinical Pharmacy general concepts: similarities and differences.
	1. Pharmaceuticalcare.
	2. Clinicalpharmacy.
	3. Pharmaceutical Care and Clinical Pharmacy similarities and differences.
5. Pharmaceutical Care and Pharmacotherapy follow-up: contribution from different international context.
	1. Pharmaceutical Care according the World Health Organization (WHO).
	2. Pharmaceutical Care and Pharmacotherapy follow-upin Spain.
	3. Pharmaceutical service and Pharmacotherapyfollow-up in Colombia.
6. Conclusions.
	1. Pharmaceutical care benefits and its implementation in Colombia.
	2. Challenges
7. References
8. **Introduction**

The pharmaceutical profession has experimented relevant changes through the last years in response to social challenges and needs. Therefore, it is necessary to know the transformation of the pharmacist work, the institutionalization of pharmacy as a clinical profession and pharmaceutical care as the main philosophy of the professional practice, where the patient is the foremost beneficiary of the pharmacist actions.

In Colombia is not clear the difference among pharmaceutical care, clinical pharmacy and pharmacotherapyfollow-up. Even the pharmacist key roles and their contribution to the health system are not well known, despite the fact that there is a pharmaceutical legislation in Colombia, where the pharmacist function is clearly defined. Therefore, is really important to clearly understand the pharmacist rolenot only as an expert in the medication production, but as the responsible of the accomplishment of the best results of the pharmacotherapy (1). Based on publications of the last 25 years, from sources like the World Health Organizationand pharmaceutical and Colombian law magazines, we conducted a literature review, attempting to define the terms: Pharmaceutical care, Clinical Pharmacy and Pharmacy Practice, with the aim to collect and unify the various definitions of the pharmacist exercise, from its inception to today (2). Similarly, it seeks to highlight the importance of the participation of the professional pharmacist in the health team, managing the welfare of the patient and the community. Finally, we want to contextualize the practice in Colombia from the legal to the practical framework, formulating proposals and challenges where the development, benefits and achievements of this profession can be revealed.

**2. Evolution stages in the pharmacist profession.**

During the twentieth century, Pharmacy faced big changes, from performing the social role of apothecary- preparing and selling medicinal drugs until reaching what is known today as the pharmacist profession. Three periods can be identified: a traditional period, a transitional period, and the patient healthcare development period (3, 4) (See table 1).

2.1 During this traditional stage the pharmacist`s function was procuring, preparing, and evaluating drug products. His primary obligation was to ensure that the drugs he sold were pure, unadulterated, and prepared *secundumartem*, although he had a secondary obligation to provide good advice to customers who asked him to prescribe drugs over the counter.The traditional role began to wane as the preparation of pharmaceutical was gradually taken over by the pharmaceutical industry and as the choice of therapeutic agents passed to the physician.

2.2 In the transition period pharmacists began to perform new tasks in the pharmacy. They began to develop innovate functions, which were accompanied by a boost in science and the generation of valuable knowledge, which then gave rise to the Clinical Pharmacy concept. During this period, the medication was the ultimate goal and there was no patient approach (5, 6).

2.3 As a consequence of the identification of the patient as the pharmaceutical care core, the transition period and clinical pharmacy evolved into a period directed to the patient and the pharmaceutical care. On this pharmacist paradigm change, medication is the mean to solve the patient health needs. Professional challenges arise at the political, economic and social levels, accompanied by the need to elaborate, promote and implement pharmaceutical policies that allow the global and national establishment of the pharmaceutical activity (7, 8, 9).

**Table 1.**Stages of pharmacist’s profession evolution (3)

|  |  |
| --- | --- |
| **Traditional** | * **FUNCTIONS:** Procure, prepare and evaluate medicinal products. Provide correct advices to the patients who need the prescription.
* **Displaced** by the pharmacy industry giving the prescription to the physicians.
 |
| **Transition** | * Around the 60’s the clinical pharmacy was born as a practice.
* Innovation and development of the roles in pharmacy and the emergence of the first bibliographic contributions.
* Directed more to the medication than to the patient.
 |
| **Care/Patient** | * Development of new roles socially necessary.
* Expansion of the rolesthat look for social responsibilities that reflecthis clinical functions.
* “Medications do not have a dose, patients do”. Cipolle
 |

**3. Pharmacotherapyfailures**

Pharmacotherapy is the widest tool used in medicine practice to solve health problems. Nevertheless, in many cases the medication is neithereffective nor safe (10).Pharmacotherapy is defined as “*a complex system integrated by interdependent joint processes, carried out by different actors, whose objective is to prevent, control and solve a patient’s health problem*”. This theoretical approximation presumes a proper execution of these interdependent processes (Chain of events relative to Drug Therapy Problems) (11). Before developing the concept of Pharmacotherapy failures it's necessary to know the original definition of drug-related problem as: “*an undesirable patient experience that involves drug therapy and that actually or potentially interferes with a desired patient outcome*” (12).

Pharmacotherapy failures (negative outcomes associated with medication) can be divided in two sorts: one is the failure to achieve the therapeutic goals (an ineffective therapeutic strategy) and the other includestheunexpected effects that appear and generate damage and toxicity (difficulties related to the safety of the medication). In thisway, the pharmaceutical care as a discipline gives an assistance oriented both to the patient and the medication. In this way, this discipline conducts different activities such as: dispensing activities and processes, pharmaceutical indications, pharmacotherapy follow-up, drug monitoring and health education, which all together allow the achievement of the therapeutic goals (13,14).

With an appropriate pharmacotherapy, an effective and economical healthcare can be ensured, which is reflected in the society and the patients. Furthermore, in order to enjoy the benefits of the human and technological unified efforts, the government regulations, the health professional (including the pharmacist) and patient participationare relevant.

**4.** **Pharmaceutical care and clinical pharmacy general concepts: similarities and differences.**

**4.1 Pharmaceutical care**

The pharmaceutical care and clinical pharmacy concepts had been developed by different authors throughout the years (3, 13, 15 -18). Mikeal, in 1975, was the first one to reflect about the term, pharmaceutical care. He defined the pharmaceutical services as “the care that a given patient requires and receives which assure safe and rational drug usage” (15). Subsequently,Brodie in 1980 makes the pharmacist responsible for the pharmacotherapy results and the population necessities related to the medication and the services that guaranteean effective and safety therapy by introducing the concept and theoretical basics of the pharmaceutical care. It includes a feedback mechanism as a way to facilitate continuity of care by those who provide it and establishes the theoretical basics of a professional practice that accepts the responsibility of the medication used by the patient(6). In 1990, Hepler and Strand considered that the clinical pharmacy had been decisive on its evolution towards pharmaceutical care, specifying it as “*The provision responsible of drug therapy for the purpose of achieving definite outcomes that improve a patient´s quality of life*”. The exercise of this pharmaceutical practice is reflected in results as the prevention and recovery of the disease, symptoms reduction or elimination, and the interruption or diminution of pathological process (3).

Cipolle and collaborators in 1998 defined pharmaceutical care as “*a practice in which the practitioner takes responsibility for patient´s drug-related needs and is held accountable for this commitment. In the course of this practice, responsible drug therapy is provided for the purpose of achieving positive patient outcomes*”(19).

**4.2 Clinical pharmacy**

The clinical pharmacy is defined by the American College of Pharmacy (ACCP) as “*a health science discipline in which pharmacists provide patient care that optimizes medication therapy and promotes health, wellness, and disease prevention*”. As well, they state that the clinical pharmacy has the obligation to contribute to the generation of new knowledge and research that improve the patient’s health and quality of life, optimizing the therapy, promoting health and preventing sickness; at the same time, the practice of clinical pharmacy embraces the philosophy of pharmaceutical care (16). The European Society of Clinical Pharmacy defines clinical pharmacy as, “*a health specialty, which describes the activities and services of the clinical pharmacist to develop and promote the rational and appropriate use of medicinal products and devices*” (20). The basic essence of clinical pharmacy is the provision of pharmaceutical care to the patient, which is a different and more evolved form of hospital pharmacy services (21).

**4.3 Pharmaceutical care and clinical pharmacy similarities and differences**

The main difference between both concepts is the beneficiary; in clinical pharmacy, the physicianis the primary natural recipient. He receives all the information about the medication uses from the pharmacist; whereas from the pharmaceutical care perspective, the patient is the main beneficiary of the pharmacist decisions and conducts. Table 2 summarizes the pharmaceutical care and clinical pharmacy similarities and differences complemented with other authors concepts (22,23).

**Table 2.**Differences and analogies of Pharmaceutical care and clinical pharmacy (22)

|  |  |  |
| --- | --- | --- |
|  | **PHARMACEUTICAL CARE** | **CLINICAL PHARMACY** |
| DIFERENCES | Pharmaceutical care is the philosophy of the profession; it is not defined as an academic discipline. | It is a health science defined as an academic discipline (clinical profession). |
| The understanding of the **clinical pharmacy** can improve the technical quality of **pharmaceutical care**. | The understanding of the **pharmaceutical care** can enrich and increase the **clinical pharmacy** practice. |
| Includes the detection of drug needs for a particular individual and the dispensing, not only of the medication required, but also the services necessary to ensure that a treatment is safe and effective. | It is a specialty of Health sciences that incorporates the application of the scientific principles of pharmacology, toxicology, pharmacokinetics and therapeutic care of patients by pharmacists. |
| Is responsible of the patient treatment results, aiming its welfare and health. | Focused in the scientific knowledge. Comprises all the processescarried out by the pharmacist, but does not concern about the results. |
| It is an alliance between the pharmacist community and other professionals who care about the patient. Includesalso, theskills, privileges and responsibilities. | It is a practice which contributes to achieve a pharmacotherapy result aiming to improve the patient’s quality of life. |
| In the case of the detection of pharmacotherapy problems, develop (with the patient or their families) the objectives pursued in relation to pathology, to drugs and the patient. | In the case of detection pharmacotherapy problems, specify the objective pursued in relation to pathology, drugs and patient related. |
| ANALOGIES | Both aim to the necessity to improve efficacy and safetyof the pharmacology treatment. |
| Both of them detect any pharmacotherapy problems. |
| Design or modify an established therapy to achieve the stated objectives, considering pharmacoeconomics principles.  |
| Evaluate the scientific bibliography to solve all the questions related with the patient therapy design. |
| Obtain all the information necessary to prevent, detect and solve all drug related problems (DRPs) and make the correct therapeutic recommendations. |
| Use the professional skills and authority to establish a collaboration relationship withthe patient and other health professionals. |

Pharmaceutical care and clinical pharmacy are concepts that support and complete each other. Clinical pharmacy is an essential component in the delivery of pharmaceutical care and can improve the quality the technical quality of pharmaceutical care.Pharmaceutical care can enrich and broaden the philosophy and practice of clinical pharmacy. Pharmaceutical care is often discussed as a system. Finally, the basis for clinical pharmacy is more in science than in relationship ethics, whereas, the basis of pharmaceutical care is more in relationship ethics than in science (1).

**5. Pharmaceutical care and pharmacotherapy: contribution from different international context.**

**5.1 Pharmaceutical care according the World Health Organization (WHO).**

In Tokio city, in 1993, the WHO defined pharmaceutical care as “a compendium of attitudes, behaviors, commitments, concerns, ethics, functions, knowledge, responsibilities and skills of the pharmacist on the provision of drug therapy with the goal of achievingdefinedtherapeutic outcomes toward patient health and quality of life”. The WHO specifiesas well, that the pharmacist should ensure the rational and economical use of medicationin every country (developed and undeveloped), by being part of the health teams, in order to meet the society assistance necessities.

Likewise, the pharmacist should participate in the formulation of drug policies;developguidelines and criteria for formularies (together with other health professionals);design and monitor drug acquisition and distribution systems, (includingdispensing and storage processes);formulate and manufacture quality medications; serve as a source of objective drug information;promote the pharmacotherapy research; develop, document and divulge the pharmaceutical care practices; participate in health promotion and prevention programs; educate continuously others pharmacists and health professionals who participate in the assistance process (10).

**5.2 Pharmaceuticalcare and pharmacotherapy follow-up in Spain.**

The Spanish pharmaceutical care consensus, held in 2001, provided different appreciations andstandardized different concepts and guidelines about the pharmaceutical practice. It emphasized the pharmacist activities that are orientedtowards the medication (acquisition, storage, raw materials conservation, pharmaceutical specialties and sanitary products) and the patient oriented activities (dispensing, compound preparation,pharmaceutical consultation or indication, rational medication use, health education, pharmacovigilanceand pharmacotherapy follow-up) that illustrate the pharmaceutical care essence (24).

Monitoring is consideredas “*a professional practice, in which the pharmacist is responsible for the patient medication needs. This is carried out by means of detection, prevention and solution of drug related problems (DRP) and implies a continuous commitment of the pharmacist and his collaboration with the patient and other health care professionals to reach concrete results that improve the patient’s quality of life*”.

It is necessary to clarify, that this concept is not equivalent with the one proposed by Hepler and Strand (pharmaceutical care), on the contrary, it is closer to the pharmacotherapy follow-up concept, which is defined as “*the professional service that aims to detect drug-related problems (DRP) for the prevention and solution of* ***negative clinical outcomes*** *(NCO). This service involves a compromise, and must be provided in a continuous, systematic and documented manner in collaboration with the patient and other professionals of the health system in order to achieve concrete results that improve the quality of life of patients*” (3, 25).

After unifying the criteria, we are able to see that the patient is the main beneficiary in this practice. Furthermore, the criteria coincide with the rational and economical optimization of the medicationin order to achievethe pharmacotherapy objectives through the pharmaceutical care philosophy, by carrying out activities like:drug dispensing, pharmaceutical prescription, pharmacotherapy follow-up, pharmacovigilance and health education (26).

**5.3 Pharmaceutical service and pharmacotherapy follow-up in Colombia.**

In the Colombian legal framework, the law 100/1990 transformed the old social security system and created an integral social security system. With this system, the central government, delegates its responsibilitieswith the population, to guarantee an improved welfare and an access to the integral social security services, including health. Furthermore, this law makes obligatory the implementation of the Good Manufacturing Practices (GMP) in all the laboratories across the country (quality) (27 -31).

In the 1990’s- the medication use, had three principal actors: the patient (user), Social Security Health Providers and the pharmaceutical industry (national and international), who beneficiated from high levels of medication consumption. At the same time, the economic resources came directly from the user and indirectly from the government. Law 100 added a new participant, Social Security Health Providers, in charge of managing the economic resources that users allowed to health. This new guidelines boosted, (from the pharmaceutical industry and theSocial Security Health Providers), policies that supposed a collective participation in the effective, safe and inexpensive use of medicationin order to achieve the welfare and human being dignity.

Under the same legal guidelines, different policies governing the pharmaceutical practice, its duties and actions, werepromulgated. Through the Law 212/1995 and the Executive Order 1945/1996 of the Colombian Social Protection Ministry, the pharmacist profession and his participation in institutional pharmacies (providing health services), pharmaceutical products supplier services, wholesale distributors andoutpatient department and hospital pharmaceutical care services, was regulated (32, 33).

In spite of this, the majority of theColombian population did not have access to essential drugs. Drug acquisition costswere unnecessary high and the prescribers and consumers had a limited knowledge about the rational and suitable use of medications. On December 19th2003, the Colombian Social Protection Ministry, and the Panamerican Health Organization (PAHO) formulated a national pharmaceutical policy, with the intention to optimize the medication use, reduce all the concerns about the access and ensuretheir quality; all of these within the health social security framework. The pharmaceutical services developed and strengthenedto ensure the access, quality and suitable use of medications (see table 3) (34).

**Table 3.** PharmaceuticalColombianpolicieslineaments(34)

|  |
| --- |
| **SEVEN STRATEGIC LINEAMENTS** |
| **Selection of medicaments included in the OHP\*** | **Competitionstimulus** |
| 1. Development of the pharmaceutical services as the basis of a suitable use (gradual professionalization and training).
 |
| 1. Training of the human resources required by the proposal.
 |
| 1. Norm revision, refiningand adjustment to achieve the regulatory framework that the proposal needs to implement a policy.
 |
| 1. Development of the institutional capacities to control, surveillance and inspection.
 |
| 1. Use of information, education and training tools in the three policy components, with emphasis in the suitable medication uses.
 |
| 1. Development and strengthening of the social participation mechanisms in the medication subject.
 |
| 1. Research promotion on biologic, natural, biotechnological, homeopathic and alternative products.
 |

\* ObligatoryHealth Plan: Basic set of health services that the Social Security Health Providers (SSHP) must render to their affiliates.

\*\*International Common Denomination.

Subsequently, the Decree 2200/2005 (regulates the pharmaceutical services and its components) and 2330/2006 (modifies the Decree 2200/2005) and the Resolution 1403/2007 (states the pharmaceutical management guidelines and adopts the essential conditions and procedures manual) wereissued (35,36, 37). At the same time, the Decree 1011/2006establishedthe Obligatory system of Health Care Quality Security (38). Furthermore, the patient safety good practices in health carewere formulated (39).

In Colombia, the pharmaceutical service is managed by a pharmacist or an authorized professional, who are entrusted of the administrative and operative logistic (management, acquisition, reception, storage, distribution and commercialization), the technical and scientific logistic (selection, conditioning, unit dose distribution)and medication oriented tasks. Likewise, the pharmacist is entrusted of patient oriented tasks consisting in health promotion and prevention, dispensing and pharmaceutical prescription (see figure 1).



**Figure 1.**Pharmaceutical care in the National and International context

In Colombia, pharmaceutical care is defined as: “the pharmacist assistance provided to a patient -or group of patients in the pharmacotherapy treatment monitoring, aiming the achievement of the professional planned objectives and the improvement of the quality of life.” This concept is equivalent to pharmacotherapy follow-up, where the target population is a patient or group of patients; and differs from what is stipulated under the Executive Order 2200/2005, where the target population is not specified (35,36).

To illustrate this discussion, a comparison of the different definitions, objectives, pharmaceutical service functions and pharmaceutical care in the national and international context, is carried out (see figure 2 and tables4 and 5).

PHARMACEUTICAL SERVICE

OBJECTIVES

DEFINITIONS

RESOLUTIÓN 1403/2007

DECREE 2200/ 2005

PhV: Pharmacovigilance; PhE: Pharmacoeconomy; PhFu: Pharmacotherapy Follow-up

**Figure2**.Pharmaceutical Service components under the Decree 2200/2005 and Resolution 1403 of 2007

**Table 4.**Pharmaceutical services functions in the National and International context.

|  |  |  |
| --- | --- | --- |
| **FUNCTIONS IN NATIONAL CONTEXT (Execute Orden 2200/2005)** | **FUNCTIONS IN SPAIN CONTEXT****(Law 16 of 1997)** | **WHO FUNCTIONS** |
| * Plan, organize, manage, coordinate and control the pharmaceutical servicesdrugs and medical devices related offered to patient and the community.
* Promote the appropriate use of the medicament and medical devices.
* Drugs and medical devicesselection, acquisition, reception, storage, distribution and dispensing.
* Carry out preparations, mixture, conditioning and doses adjustment / Good Manufacturing Practices (GMP).
* Offer to the patient the pharmaceutical care.
* Participate in pharmacovigilance programs, antibiotics uses and appropriate use of medications.
* Participate in studies related to drugs and medical devices, especially de ones related with clinical pharmacy.
* Inform and educate the health team members, the patients and the community, about the medicament adequate use.
* Develop and apply mechanism to ensure the quality management system.
* Participate in the pharmacy and therapeutic, infections and bioethics committees.
 | * The acquisition, custody, storage and dispensing of medicines and medical devices.
* Monitoring, control and custody of prescriptions dispensed.
* Guaranteeof pharmaceutical care in their area of pharmaceuticals, population centers where there are no pharmacies.
* The development of formulations and preparations officers, according to the established procedures and controls.
* Information andmonitoring pharmacological treatment´s patients.
* Collaboration in the control of individual use of drugs, in order to detect of adverse reactions that may occurs and notify to the phamacovigilance organism.
* Collaboration with the sanitary administration program about quality guarantees of the pharmaceutical assistance, sanitary attention, promotion, prevention andhealth education.
* Collaboration with the health authorities in the formation and information directed to the restof health professionals and others users, on the rational use of medicines and medical devices.
* The action coordinated with health serviceof the autonomous communities health services.
* The collaboration in teaching for obtaining a degree pharmacist, in agreement with the anticipated think in the communitarian directives, and the State Regulation and of the Universities by establishing the curricula for each of them.
 | * Obtain and maintain medication records and relevant health information, if they do not already exist. Thisinformationisessentialtoassessindividualizeddrugtherapy.
* Identify, evaluate and assess:

- drug related problems (side effects; drug interactions; improper drug use) - symptoms described by patients- self-diagnosed conditions* Initiate or modify drug/non drug therapies.
* Prepare and supply medication for use (including selection of drug products, prescription assessment, dispensing, compounding, packaging, labelling).
* With prescriber and/or patient, as the case may be. - set goals of therapy
* Design and implement pharmaceutical care plan (education, counselling)
* Monitor for therapeutic outcomes and take appropriate follow up actions (begin the pharmaceutical care cycle again)
* Participate in the formulation of drug policy including drug regulation
* Develop guidelines and criteria for formularies
* Collaborate with other health care professionals to develop treatment guidelines
* Design and monitor procurement and drug distribution systems, including storage and disposal (e.g. country wide, local, institutional)
* Formulate and manufacture quality medications within pharmacy practice
* Serve as a source of objective drug information: establish poison and drug information systems, e.g. poison and drug information centers
* Initiate and undertake research in e.g. pharmacotherapeutics including clinical trials; pharmacoepidemiology; pharmacy practice; health economics; and evaluate and document the results of such research in order to improve all aspects of pharmaceutical care.
* Educate all health professionals who participate in pharmaceutical care
* Develop, evaluate and document pharmaceutical care practices
* Participate in health screening (e.g. diabetes, cholesterol)
* Participate in health promotion and education (e.g. the proper use of medication; smoking cessation; immunization; prevention of drug abuse; hygiene; family planning; AIDS prevention)
* Develop professional standards and audit procedures
* Establish and maintain an appropriately qualified pharmacy workforce.
 |

**Table 5.Definitions of Pharmaceutical care in the National and International context**

|  |  |  |
| --- | --- | --- |
| PHARMACEUTICAL CARE FARMACÉUTICA | DEFINITION IN NATIONAL CONTEXT | DEFINITION IN INTERNATIONAL CONTEXT |
| EXECUTIVE ORDER 2200 | Patient assistance, by the pharmacist in the pharmacotherapy follow-up, orientated, to contribute with the medic and others health professionals, in the results achievement to improve its quality life.  | Hepler y Strand(1989-1990) | Patient assistance in the dispensing and pharmacotherapy follow-up treatments, cooperating with the medic and others sanitary professionals aiming the results achievement that improve the patient quality life. IncludesPromotion and prevention |
| WHO(1993) | Attitudes, behaviors, compromises, concerns, ethical values, functions, knowledge, responsibilities and pharmacist skills compendium in the pharmacotherapy provision, aiming the achievement of therapeutic results defined in health and patient quality life. IncludesPromotion and prevention. |
| 2001 Spain consensus about Pharmaceutical care. | Pharmacist active participation in the improvement of patient quality life through the dispensing, pharmaceutical prescription and pharmacotherapy follow-up, together with the health team. IncludesPromotion and prevention. |
| PHARMACOTHERAPY FOLLOW-UP SEGUIMIENTO FARMACOTERAPEUTICO | PHARMACOTHERAPY FOLLOW-UP | The pharmacist target population is the patients or group of patients. In the executive order 2200 the target population was not specified. | 2008 Pharmaceuticalcareforum | Professional service aiming the detection of drug-related problems (DRP), to prevent and clear up the negative clinical outcomes (NCO). This service involves the collaboration with the patient and the other health professionals aiming the achievement of specific results that improve the patient quality life. |
| 2001 Spain consensus about Pharmaceutical care. | Professional practice where the pharmacist is responsible of the patient necessities medicament related, through the detection, prevention and the clear up of problems medicament related in a continues, systematized, and documentated way, in collaboration with the patient and the other health professionals aiming the achievement of specific results that improve the patient quality life. |

**6. Commentaries**

**6.1 Pharmaceutical care benefits and its implementation in Colombia.**

Pharmaceutical care contributes to decrease the negative results associated to pharmacotherapy failures.At the same time, it generates economic benefits to the health system, removing unnecessary pharmacotherapy, decreasing the numbers of appointments, avoiding costs generated in urgencies and hospitalization services, increasing the treatment adherence and improving the quality of the service (40,41).

Colombia is a country that recently opened its doors to the pharmaceutical care. It had achieved performer policiesin the welfare practices that promote the quality and access to the health products and services. Nevertheless, there is still a need to move forward in this concept, since in our country there is still a great number of a drugstore limited to the medication sale (dispensatory activity) where an authorized pharmacytechnician or even the pharmacist limits its activity to a lucrative practice, forgetting the patient’s necessities related to the medication (42-47).

The pharmacist practice and performance should exceed the medication dispensing, and focus in the welfare practice (medicament-patient); likewise, the pharmacist should be included in the health team as a medicament expert and assume the responsibility of patient’sresults (47-49). Consequently, the need arises to bring up, from the universities, academic professionals, competitive, leaders with social responsibilities and conscience that are able to execute in a correct way the profession (50,51). Butthese transformations require the collective participation of the different administrative, economical and pharmaceutical entities, exhorting philosophical, political and logistic changes that renovate the pharmaceutical profession (52,53).

With this approach, an invitation to generate a greater scientific evidence of this practice is made, in favor of the pharmacist recognition in the health system. This situation demands to carry out, register and publish the pharmacist contributions to the optimization of pharmacotherapy and its associated costs (54). Likewise, it requires the implementation and development of pharmacoeconomy, pharmacoepidemiology, pharmacovigilance and pharmacotherapy follow-up programs.

**6.2 Challenges**

Colombia requires that the advances and achievements made in the pharmaceutical care context, expressed in a punctual way in some institutions, be implemented in all the pharmaceutical services across the country, leaving evidence about the socio-economic benefits and the positive results achieved in patients. Under these circumstances,it is necessary:

To promote the formation of pharmacists to implement pharmaceutical care (pharmacotherapy follow-up) programs (55).

To promote the training of pharmacists to implement pharmaceutical care programs (Pharmacotherapy follow-up) through curricular reforms of the undergraduate and postgraduate (seen as a scientific discipline aimed at clinical practice and teaching) in all pharmacy faculties in Colombia and their respective accreditation, using strategies that create impact in the community such as feedback from researchers, partnerships with private companies, active participation in different professional associations, pharmaceutical, academic practices in the community (hospitals, clinics, laboratories, industry, etc.) and graduate programs (56).

To guarantee, throughthe different health entities, evaluations and strategies that improve the safety and quality of life of the patient.

To encourage programs of promotion and prevention those improve the patient’s quality of life and at the same time avoid additional expenses related to the pharmacotherapy.

To promote the research and development of safe and secure medicationsthose facilitatethe achievement of the pharmacotherapy objectives.

To establish at the national and international levels, active strategies of adverse events reports, dispensing and medication mistakes that will be reflected in new unified policies of the pharmaceutical practice.

To continuously plan, organize and manage policies that guarantee the patient’sbenefited; ensuring a universal health coverage and access to different services.

To arouse the executionof continuous researches, that allow the identification of variations related to medication use, health services access and quality.

To leave some evidence of the corrective or preventive measuresthose promote the rational and economical optimization of medicaments.

**7. REFERENCES**

1. Hepler CD. Clinical pharmacy, pharmaceutical care, and the quality of drug therapy. Pharmacotherapy. 2004 Nov; 24(11):1491-8. Review.
2. Ahmed SI, Hasan SS, Hassali MA. Clinical pharmacy and pharmaceutical care: a need to homogenize the concepts. Am J PharmEduc. 2010 Dec 15;74(10):193g
3. Hepler C, Strand L. Opportunities and Responsibilities in Pharmaceutical Care. Am J HospPharm. 1990; 47 (3): 533-43.
4. Hepler CD. The third wave in pharmaceutical education: the clinical movement. Am J PharmEduc. 1987; 51 (4): 369-85.
5. Angaram DM, Hepler CD, Njornson DC. Career patterns of pioneer clinical pharmacists. Am J HospPharm. 1988; 45 (1): 101-08.
6. Brodie DC, Parish PA, Poston JW. Societal needs for drugs and drug-related services. Am J Pharm Educ. 1980; 44 (3):276-8.
7. [Brodie DC](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Brodie%20DC%22%5BAuthor%5D). Pharmacy's societal purpose.Am J HospPharm. 1981; 38 (12):1893-6.
8. Holland RW, Nimmo CM. Transitions in pharmacy practice, part 1: Beyond pharmaceutical care. Am J Health-SystPh. 1999; 56 (1): 1758-64.
9. Cooksey JA, Knapp KK, Walton SM, Cultice JM. Challenges to the pharmacist profession from escalating pharmaceutical demand. HealthAffair.2002; 2 (5):182-8.
10. Organización Mundial de la Salud. El papel del farmacéutico en el Sistema de Atención en Salud. Informe de la reunión de la Organización Mundial de la Salud. [Internet]. Disponible en URL: <http://www.ops.org.bo/textocompleto/ime9848.pdf>. Consultado 03 de marzo de 2010.
11. Amariles P, Giraldo N, Gómez A. Gestión y Aseguramiento de la Calidad de la Farmacoterapia: Aproximación para el contexto del Sistema de Salud de Colombia. Medellín, Colombia: Ed. Grupo de Promoción y Prevención Farmacéutica; 2007. 64 p.
12. Strand LM, Morley PC, Cipolle RJ, Ramsey R, Lamsam GD: Drug-related problems: their structure and function. DICP Ann Pharmacother 1990; 24(11):1093-7.
13. Amariles P, Martinez F, Faus MJ. Atención Farmacéutica: conceptos, procesos y casos prácticos. Madrid, España: Ed. Ergon; 2007. 210 p.
14. Amariles P. Seguimiento Farmacéutico de pacientes en el contexto del sistema de salud en Colombia. Nuevos Tiempos. 2002; 10 (2): 93-113.
15. Mikeal RL, Brown TP, Lazarous HL, Vinson MC. Quality of pharmaceutical care in hospitals. Am J HospPharm. 1975; 32: 567-74.
16. American College of Clinical Pharmacy ACCP. The definition of clinical pharmacy. Pharmacotherapy. 2008; 28 (6): 816-17.
17. Penna RP. Pharmaceutical care: pharmacy’s mission for the 1990s. Am J HospPharm. 1990; 47 (3): 543-9.
18. Pierpaoli PG, Hethcox JM. Pharmaceutical care: new management and leadership imperatives. Top HospPharmManage. 1992; 12 (3):1-18.
19. Cipolle RJ, Strand LM, Morley PC. Pharmaceutical care practice. New York: McGraw-Hill, 1998:1.
20. Hepler CD. Clinical pharmacy, pharmaceutical care, and the quality of drug therapy. Pharmacotherapy. 2004 Nov; 24(11):1491-8. Review.
21. Ahmed SI, Hasan SS, Hassali MA. Clinical pharmacy and pharmaceutical care: a need to homogenize the concepts. Am J PharmEduc. 2010 Dec 15; 74(10):193g.
22. Herrera Carranza J. Manual de Farmacia clínica y Atención Farmacéutica. Madrid, España: Elsevier; 2003. 520p.
23. Bonal, J. García, L. Atención Farmacéutica: 100 preguntas más frecuentes. Barcelona. EDIMSA. 2002. p. 26.
24. Grupo de Expertos en Atención Farmacéutica y Ministerio de Sanidad y Consumo de España. Consenso sobre Atención Farmacéutica. ArsPharm 2001; 42 (3-4): 221-241.
25. Grupo de Expertos en Atención Farmacéutica. Foro de Atención Farmacéutica. Documento de Consenso. Madrid, España: 2008. 80 p.
26. Sabater Hernández, D, Silva Castro, MM, FausDáder, MJ. Método DADER. Guía de seguimiento farmacoterapéutico. 3ª edición. Grupo de Investigación en Atención Farmacéutica. 2007. 128 p.
27. Colombia. Congreso de la República. Ley 100 de 1993, diciembre 23, por la cual se crea el sistema de seguridad social integral y se dictan otras disposiciones. Bogotá: El Congreso; 1993.
28. Colombia. Ministerio de Salud. Decreto 677 de 1995, abril 26, por lo cual se reglamenta parcialmente el Régimen de Registros y Licencias, el Control de Calidad, así como el Régimen de Vigilancias Sanitarias de Medicamentos, Cosméticos, Preparaciones Farmacéuticas a base de Recursos Naturales, Productos de Aseo, Higiene y Limpieza y otros productos de uso doméstico y se dictan otras disposiciones sobre la materia. Bogotá: El Ministerio; 1995.
29. Colombia. Ministerio de Salud. Decreto 3075 de 1997, diciembre 23, por el cual se reglamenta la ley 09 de 1979 y se dictan otras disposiciones. Bogotá: El Ministerio; 1997.
30. Colombia. Ministerio de Salud. Decreto 1792 de 1998, agosto 31, por el cual se modifica el Decreto 677 de 1995. Bogotá: El Ministerio; 1998.
31. Colombia. Ministerio de Salud. Decreto 549 de 2001, marzo 29, por el cual se reglamenta el procedimiento para la obtención de las Buenas Prácticas de Manufactura. Bogotá: El Ministerio; 2001.
32. Colombia. Congreso de la República. Ley 212 de 1995, octubre 26, por el cual se reglamenta la Profesión de Químico Farmacéutico y se dictan otras disposiciones. Bogotá: El Congreso; 1995.
33. Colombia. Ministerio de la Protección Social. Decreto 1945 de 1996, octubre 28, por el cual se reglamentan parcialmente las leyes 23 de 1962 y 212 de 1995, y se dictan otras disposiciones. Bogotá: El Ministerio; 1996.
34. Colombia. Ministerio de Protección Social, Organización Panamericana de la Salud (OPS). Política Farmacéutica Nacional - Colombia. Bogotá: Ministerio de la Protección Social; 1994. 32 p.
35. Colombia. Ministerio de la Protección Social. Decreto Número 2200 de 2005, junio 28, por el cual se reglamenta el Servicio Farmacéutico y se dictan otras disposiciones. Bogotá: El Ministerio; 2005.
36. Colombia. Ministerio de la Protección Social. Decreto Número 2330 de 2006, julio 12, por el cual se modifica el Decreto 2200 de 2005 y se dictan otras disposiciones. Bogotá: El Ministerio; 2006.
37. Colombia. Ministerio de la Protección Social. Resolución Número 1403 de 2007, mayo 14, por la cual se determina el Modelo de Gestión del Servicio Farmacéutico, se adopta el Manual de Condiciones Esenciales y Procedimientos y se dictan otras disposiciones. Bogotá: El Ministerio; 2007.
38. Colombia. Ministerio de la Protección Social. Decreto Número 1011 de 2006, abril 03, por el cual se establece el Sistema Obligatorio de Garantía de Calidad de la Atención de Salud del Sistema General de Seguridad Social en Salud. Bogotá: El Ministerio; 2006.
39. Colombia. Ministerio de la Protección Social. Guía Técnica “Buenas Prácticas para la Seguridad del Paciente en la Atención en Salud. Bogotá: Ministerio de la Protección Social; 2010. 47 p.
40. Sabater D, Silva-Castro MM, Amariles P, Faus MJ. Documentación de las actividades asistenciales del farmacéutico: la historia farmacoterapéutica. FarmHosp. 2008; 32 (1): 56-7.
41. Strand LM. Una perspectiva personal sobre seguimiento farmacoterapéutico. En: I Congreso de la Sociedad Española de Farmacia Comunitaria (SEFaC). SeguimFarmacoter. 2004; 2 (supl 1): 21-3.
42. Amariles P, Giraldo NA, Toro VE, Restrepo MM, Galvis DA, Pérez JA. Método Dáder de seguimiento farmacoterapéutico y farmacovigilancia en instituciones de salud de Colombia. Vitae. 2005; 12 (1): 29-38.
43. Amariles P, Giraldo N. Método Dáder de seguimiento farmacoterapéutico a pacientes y Problemas Relacionados con la Utilización de Medicamentos en el contexto de Colombia. SeguimFarmacoter. 2003; 1(3): 99-104.
44. Agudelo N, Cifuentes J, Amariles P. Impacto de la intervención del químico farmacéutico en el proceso de atención ambulatoria en una institución de salud en Medellín-Colombia. PharmaceuticalCare. 2003; 5 (1): 1-12.
45. Amariles P, Restrepo LG, Guzmán DE. Hallazgos, Propuestas y Perspectivas en el Sistema de Suministro de Insumos Hospitalarios en Hospitales de Antioquia. Vitae 1996; 4 (2): 45-58.
46. Amariles P, Faus MJ, Saez-Benito BL. Pharmacist interventions focus in high impact journals. FarmHosp. 2007; 31 (6): 380-2.
47. Organización Mundial de la Salud (OMS), Federación Internacional de Farmacéuticos (FIP). Manual de Desarrollo de la práctica de Farmacia centrada en la atención al paciente. Edición 2006. [Internet]. Disponible en URL: <http://www.fip.org/files/fip/publications/DevelopingPharmacyPractice/DevelopingPharmacyPracticeES.pdf>. Consultado 15 de marzo 2010.
48. Fontana D, Uema S, Solá N. Seguimiento Farmacoterapéutico en el Ámbito Hospitalario: Análisis DAFO. Acta Farm. Bonaerense. 2003; 22 (1): 81-6.
49. Andrade JA, Martínez-Olmos J, Baena-Parejo MI, FausDáder MJ, Martínez-Martínez F, Fajardo PC. Adaptación del Método Dáder de seguimiento farmacoterapéutico al nivel asistencial de atención primaria. SeguimFarmacoter. 2005; 3 (3): 158-64.
50. Christine M. Nimmo, Ross W. Holland. Transitions in pharmacy practice, part 2: who does what and why? Am J Health-SystPharm. 1999; 56 (19): 1981-7.
51. Christine M. Nimmo, Ross W. Holland. Transitions in pharmacy practice, part 5: walking the tightrope of change. Am J Health-SystPharm. 2000; 57 (1): 64-72.
52. Burke JM, Miller WA, Spencer AP, Crank CW, Adkins L, Bertch KE, *et al*. ClinicalPharmacistCompetencies. Pharmacotherapy. 2008; 28 (6): 806-15.
53. Strand LM, Cipolle RJ, Morley PC. Pharmaceutical Care: an introduction. Kalamazoo, MI. USA: UpjohnCompany; 1992. 32 p.
54. Oliveira DR, Varela ND. La investigación cualitativa en Farmacia. Aplicación en la Atención Farmacéutica. RevBrasCienc Farm. 2008; 44 (4): 763-72.
55. Berenguer B, La Casa C, de la Matta MJ, Martín-Calero MJ. Pharmaceutical care:
past, present and future. CurrPharm Des. 2004;10(31):3931-46.
56. Kehrer JP, Kradjan W, Beardsley R, Zavod R. New pharmacy faculty enculturation to facilitate the integration of pharmacy disciplines and faculty retention. Am J PharmEduc. 2008 Feb 15; 72(1):18.).
1. Grupo de Promoción y Prevención Farmacéutica. Universidad de Antioquia. A.A.1226. Medellín, Colombia [↑](#footnote-ref-2)
2. Programa Ofidismo/Escorpionismo. Universidad de Antioquia. A.A. 1226. Medellín, Colombia.

\* Autor principal. E-mail: pamaris@farmacia.udea.edu.co. Teléfono: +57 4 219 54 50 [↑](#footnote-ref-3)